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B are identical or different and denote K-R,
 wherein

K is a bond or is $A^1-(A^2-A^3)_k-sp$, wherein

A^1 is $(CH_2)_tY(CH_2)_u$, wherein

Y is $>C=O$, $>NH$, $-O-$, $-S-$ or a bond,

t is an integer from 0 to 6 and

u is an integer from 0 to 6,

A^2 is $-NHCO-$, $-CONH-$, $-OCONH-$ or $SCONH-$, or is $-CO-$,

A^3 is $(CH_2)_r$, $O(CH_2)_r$, $NH(CH_2)_r$, $S(CH_2)_r$ or $-(CHQ)-$, wherein

r is an integer from 1 to 6 and

Q is a substituted or unsubstituted alkyl or aryl group,

sp is a divalent spacer or a bond, and

k is an integer from 5 to 100, and

R is hydrogen; a ligand suitable for specific bonding to a receptor;
 a marker molecule; or a catalytically active group; and

m is at least 2,

with the proviso that

- (1) in the compound at least one R is not hydrogen,
- (2) there are at least two K that are not a bond, and
- (3) X, B and m are so selected that an intermolecular association of the K in liquid phase by the formation of hydrogen bonds is possible, with formation of aggregates that present on the surface a plurality of R that are not hydrogen, and
- (4) the molar mass of the fragment $X(K)_m$ is less than 20,000.

2. (Amended) A compound according to claim 1, wherein the molar mass of the fragment $X(K)_m$ is less than 4,000.

3. (Amended) A compound according to claim 1, wherein

m is an integer from 2 to 4, and

X is CH_{4-m} , NH_{3-m} , N^+H_{4-m} , $>P-$ (when $m = 3$), $>P^+<$ (when $m = 4$), $>B-$ (when $m = 3$), a linear atom group C_2H_{6-m} , $>CH(CH_2)_zCH<$, $>C=C<$, $>N-N<$, $>N(CH_2)_zN<$ wherein $z = 2 - 6$, when $m = 4$, a carbocyclic atom group C_6H_6 .

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m , C_6H_{12-m} , or a heterocyclic atom group C_3N_3 (when $m = 3$), C_4N_2 (when $m = 4$).

4. (Amended) A compound according to claim 1, wherein there are at least 3 K.

5. (Amended) A compound according to claim 1, wherein at least two R are not hydrogen.

6. (Amended) A compound according to claim 1, wherein at least three R are not hydrogen.

7. (Amended) A compound according to claim 1, wherein the ligand R is a mono- or oligo-saccharide, a peptide, a mono- or oligo-nucleotide or a nucleic base and their derivatives and mimetics.

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CONT. — 8. (Amended) A compound according to claim 7, wherein the saccharide R is sialic acid, sialyl lactose, sialyl lactosamine, lactose, mannose, $Gal\alpha 1-3Gal$, $Gal\alpha 1-3(Fuc\alpha 1-2)Gal$, $GalNAc\alpha 1-3(Fuc\alpha 1-2)Gal$, $Neu5Ac\alpha 2-6GalNAc$, $SiaLe^A$, $SiaLe^X$, HSO_3Le^A , HSO_3Le^X , $Gal\alpha 1-3Gal\beta 1-4GlcNAc$, $Gal\alpha 1-3Gal\beta 1-4Glc$, $HSO_3GlcA\beta 1-3Gal\beta 1-4GlcNAc$, N-acetyl-lactosamine or polylactosamine, or wherein the saccharide is sialic acid benzyl glycoside, $HSO_3GlcA\beta 1-3Gal$, $HSO_3GlcA\beta 1-3Gal\beta 1-4GlcNAc\beta 1-3Gal\beta 1-4Glc$, $GalNAc\alpha$, $GalNAc\alpha 1-3(Fuc\alpha 1-2)Gal\beta 1-4GlcNAc$, $Gal\alpha 1-3(Fuc\alpha 1-2)Gal\beta 1-4GlcNAc$, $HSO_3(Sia)Le^X$, $HSO_3(Sia)Le^A$, Le^Y , $GlcNAc\beta 1-6(GlcNAc\beta 1-3)Gal\beta 1-4Glc$, $GalNAc\beta 1-4(Neu5Ac\alpha 2-3)Gal\beta 1-4Glc$, mannose-6-phosphate, $GalNAc\beta 1-4GlcNAc$, oligo-sialic acid, N-glycolylneuraminic acid, $Gal\alpha 1-4Gal\beta 1-4Glc$, $Gal\alpha 1-4Gal\beta 1-4GlcNAc$.

9. (Amended) A compound according to claim 1, wherein

m is an integer from 2 to 4,

X is CH_{4-m} ,

A^1 is CH_2 ,

A^2 is $NHCO$,

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A^3 is CH_2 ,
 k is 8,
 sp is $(\text{CH}_2)_3\text{CONHCH}_2\text{CONHC}_6\text{H}_4\text{-4-CH}_2\text{O-}$ and
 R is Neu5Ac α 2-6Gal β 1-4GlcNAc.

10. (Amended) An aggregate of the general formula (II):



wherein

$\text{X}(\text{B})_m$ may be identical or different and denote a compound of the general formula (I),



wherein

X is an m -valent unit and

B are identical or different and denote K - R ,

wherein

K is a bond or is $A^1\text{-(}A^2\text{-}A^3\text{)}_k\text{-}sp$, wherein

A^1 is $(\text{CH}_2)_t\text{Y}(\text{CH}_2)_u$, wherein

Y is $>\text{C}=\text{O}$, $>\text{NH}$, $-\text{O}-$, $-\text{S}-$ or a bond,

t is an integer from 0 to 6 and

u is an integer from 0 to 6,

A^2 is $-\text{NHCO}-$, $-\text{CONH}-$, $-\text{OCONH}-$ or $\text{SCONH}-$, or is $-\text{CO}-$,

A^3 is $(\text{CH}_2)_r$, $\text{O}(\text{CH}_2)_r$, $\text{NH}(\text{CH}_2)_r$, $\text{S}(\text{CH}_2)_r$ or $-(\text{CHQ})-$, wherein

r is an integer from 1 to 6 and

Q is a substituted or unsubstituted alkyl or aryl group,

sp is a divalent spacer or a bond, and

k is an integer from 5 to 100, and

R is hydrogen; a ligand suitable for specific bonding to a receptor;
 a marker molecule; or a catalytically active group; and

m is at least 2,

with the proviso that

- (1) in the compound at least one R is not hydrogen,
- (2) there are at least two K that are not a bond, and

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- (3) X, B and m are so selected that an intermolecular association of the K in liquid phase by the formation of hydrogen bonds is possible, with formation of aggregates that present on the surface a plurality of R that are not hydrogen, and
- (4) the molar mass of the fragment $X(K)_m$ is less than 20,000, and
 n is from 2 to 100,000,
 and wherein $X(B)_m$ are non-covalently bonded.

11. (Amended) An aggregate according to claim 10 having a leaf-like, linear, cyclic, polycyclic, polyhedral, spherical or dendritic structure.

12. (Amended) An aggregate according to claim 10 of two or more different compounds comprising a compound of the general formula (I)



wherein

X is an m-valent unit and

B are identical or different and denote K-R,

wherein

K is a bond or is $A^1-(A^2-A^3)_k\text{-sp}$, wherein

A^1 is $(CH_2)_tY(CH_2)_u$, wherein

Y is $>C=O$, $>NH$, $-O-$, $-S-$ or a bond,

t is an integer from 0 to 6 and

u is an integer from 0 to 6,

A^2 is $-NHCO-$, $-CONH-$, $-OCONH-$ or $SCONH-$, or is $-CO-$,

A^3 is $(CH_2)_r$, $O(CH_2)_r$, $NH(CH_2)_r$, $S(CH_2)_r$ or $-(CHQ)-$, wherein

r is an integer from 1 to 6 and

Q is a substituted or unsubstituted alkyl or aryl group,

sp is a divalent spacer or a bond, and

k is an integer from 5 to 100, and

R is hydrogen; a ligand suitable for specific bonding to a receptor;
 a marker molecule; or a catalytically active group; and

m is at least 2,

with the proviso that

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- (1) in the compound at least one R is not hydrogen,
- (2) there are at least two K that are not a bond, and
- (3) X, B and m are so selected that an intermolecular association of the K in liquid phase by the formation of hydrogen bonds is possible, with formation of aggregates that present on the surface a plurality of R that are not hydrogen, and
- (4) the molar mass of the fragment $X(K)_m$ is less than 20,000.

Q ~~Claim 13 has been canceled~~

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-Cont.-
 14. (Amended) A method according to claim 27, further comprising adding a concentrated salt solution, changing the pH or the temperature, or adding organic solvents.

15. (Amended) A method for changing the structure of an aggregate of the general formula (II)



wherein

$X(B)_m$ may be identical or different and denote a compound of the general formula (I),



wherein

X is an m-valent unit and

B are identical or different and denote K-R,

wherein

K is a bond or is $A^1-(A^2-A^3)_k$ -sp, wherein

A^1 is $(CH_2)_tY(CH_2)_u$, wherein

Y is $>C=O$, $>NH$, $-O-$, $-S-$ or a bond,

t is an integer from 0 to 6 and

u is an integer from 0 to 6,

A^2 is $-NHCO-$, $-CONH-$, $-OCONH-$ or $SCONH-$, or is $-CO-$,

A^3 is $(CH_2)_r$, $O(CH_2)_r$, $NH(CH_2)_r$, $S(CH_2)_r$ or $-(CHQ)-$, wherein

r is an integer from 1 to 6 and

Q is a substituted or unsubstituted alkyl or aryl group,

sp is a divalent spacer or a bond, and

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k is an integer from 5 to 100, and
 R is hydrogen; a ligand suitable for specific bonding to a receptor;
 a marker molecule; or a catalytically active group; and
 m is at least 2,
 with the proviso that

- (1) in the compound at least one R is not hydrogen,
- (2) there are at least two K that are not a bond, and
- (3) X , B and m are so selected that an intermolecular association of the K in liquid phase by the formation of hydrogen bonds is possible, with formation of aggregates that present on the surface a plurality of R that are not hydrogen, and
- (4) the molar mass of the fragment $X(K)_m$ is less than 20,000, and
 n is from 2 to 100,000,
 and wherein $X(B)_m$ are non-covalently bonded,
 further comprising adding a concentrated salt solution, changing the temperature or the pH and/or adding urea, trifluoroethanol or peptides.

16. (Amended) A method according to claim 27 further comprising increasing the specific physiological activities of molecules by incorporating a radical R into a compound of the general formula (I).

Claim 17 has been canceled.

18. (Amended) A method of treating diseases arising from inflammation, viral and bacterial infections, influenza viruses, selectin-mediated inflammatory processes, tumour metastases, or in the neutralisation of antibodies in autoimmune disorders and transplants; said method comprising administering a compound of the general formula (I)



wherein

X is an m -valent unit and

B are identical or different and denote K - R ,

wherein

K is a bond or is $A^1-(A^2-A^3)_k$ -sp, wherein

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A^1 is $(CH_2)_t Y (CH_2)_u$, wherein
 Y is $>C=O$, $>NH$, $-O-$, $-S-$ or a bond,
 t is an integer from 0 to 6 and
 u is an integer from 0 to 6,
 A^2 is $-NHCO-$, $-CONH-$, $-OCONH-$ or $SCONH-$, or is $-CO-$,
 A^3 is $(CH_2)_r$, $O(CH_2)_r$, $NH(CH_2)_r$, $S(CH_2)_r$ or $-(CHQ)-$, wherein
 r is an integer from 1 to 6 and
 Q is a substituted or unsubstituted alkyl or aryl group,
 sp is a divalent spacer or a bond, and
 k is an integer from 5 to 100, and

R is hydrogen; a ligand suitable for specific bonding to a receptor;
 a marker molecule; or a catalytically active group; and

m is at least 2,
 with the proviso that

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- (1) in the compound at least one R is not hydrogen,
 - (2) there are at least two K that are not a bond, and
 - (3) X , B and m are so selected that an intermolecular association of the K in liquid phase by the formation of hydrogen bonds is possible, with formation of aggregates that present on the surface a plurality of R that are not hydrogen, and
 - (4) the molar mass of the fragment $X(K)_m$ is less than 20,000; or

administering into an aggregate of the general formula (II)



wherein

$X(B)_m$ may be identical or different and denote a compound of the general formula (I), and

n is from 2 to 100,000,

and wherein $X(B)_m$ are non-covalently bonded.

a ~~Claim 19 has been canceled.~~

20. (Amended) A method according to claim 18 further comprising preparing functionalized molecular surfaces.

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~~a Claims 21 and 22 have been canceled.~~

23. (Amended) A compound of the general formula (III),



wherein

X is an m-valent unit and

B are identical or different and denote K-H,
 wherein

K is $A^1-(A^2-A^3)_k$ -sp, wherein

A^1 is $(CH_2)_t Y(CH_2)_u$, wherein

Y is $>C=O$, $>NH$, $-O-$, $-S-$ or a bond,

t is an integer from 0 to 6 and

u is an integer from 0 to 6,

A^2 is $-NHCO-$, $-CONH-$, $-OCONH-$ or $SCONH-$, or is $-CO-$,

A^3 is $(CH_2)_r$, $O(CH_2)_r$, $NH(CH_2)_r$, $S(CH_2)_r$ or $-(CHQ)-$, wherein

r is an integer from 1 to 6 and

Q is a substituted or unsubstituted alkyl or aryl group,

sp is a divalent spacer or a bond, and

k is an integer from 5 to 100, and

m is at least 2,

with the proviso that

- (1) X, B and m are so selected that an intermolecular association of the K in liquid phase is possible, especially under aqueous conditions, by the formation of hydrogen bonds, with formation of aggregates, and
- (2) the molar mass of the fragment $X(K)_m$ is less than 20,000, especially less than 4000.

~~a Claim 24 has been canceled.~~

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25. (New) A method of preparing a therapeutic drug comprising:
 preparing a compound of the general formula (III),



wherein

X is an m-valent unit and

B are identical or different and denote K-H,

wherein

K is $A^1-(A^2-A^3)_k$ -sp, wherein

A^1 is $(CH_2)_t Y (CH_2)_u$, wherein

Y is $>C=O$, $>NH$, $-O-$, $-S-$ or a bond,

t is an integer from 0 to 6 and

u is an integer from 0 to 6,

A^2 is $-NHCO-$, $-CONH-$, $-OCONH-$ or $SCONH-$, or is $-CO-$,

A^3 is $(CH_2)_r$, $O(CH_2)_r$, $NH(CH_2)_r$, $S(CH_2)_r$ or $-(CHQ)-$, wherein

r is an integer from 1 to 6 and

Q is a substituted or unsubstituted alkyl or aryl group,

sp is a divalent spacer or a bond, and

k is an integer from 5 to 100, and

m is at least 2,

with the proviso that

- (1) X, B and m are so selected that an intermolecular association of the K in liquid phase is possible, especially under aqueous conditions, by the formation of hydrogen bonds, with formation of aggregates, and
- (2) the molar mass of the fragment $X(K)_m$ is less than 20,000, especially less than 4000.

26. (New) A method of treating diseases arising from inflammation, viral and bacterial infections, influenza viruses, selectin-mediated inflammatory processes, tumour metastases, or in the neutralisation of antibodies in autoimmune disorders and transplants; said method comprising administering a compound of the general formula (III),

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wherein

X is an m-valent unit and

B are identical or different and denote K-H,
 wherein

K is $A^1-(A^2-A^3)_k\text{-sp}$, wherein

A^1 is $(CH_2)_t Y(CH_2)_u$, wherein

Y is $>C=O$, $>NH$, $-O-$, $-S-$ or a bond,

t is an integer from 0 to 6 and

u is an integer from 0 to 6,

A^2 is $-NHCO-$, $-CONH-$, $-OCONH-$ or $SCONH-$, or is $-CO-$,

A^3 is $(CH_2)_r$, $O(CH_2)_r$, $NH(CH_2)_r$, $S(CH_2)_r$ or $-(CHQ)-$, wherein

r is an integer from 1 to 6 and

Q is a substituted or unsubstituted alkyl or aryl group,

sp is a divalent spacer or a bond, and

k is an integer from 5 to 100, and

m is at least 2,

with the proviso that

- (1) X, B and m are so selected that an intermolecular association of the K in liquid phase is possible, especially under aqueous conditions, by the formation of hydrogen bonds, with formation of aggregates, and
- (2) the molar mass of the fragment $X(K)_m$ is less than 20,000, especially less than 4000.

27. (New) A method of preparing an aggregate comprising:
 preparing a compound of the general formula (II)



wherein

$X(B)_m$ may be identical or different and denote a compound of the general formula (I),



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wherein

X is an m-valent unit and

B are identical or different and denote K-R,
 wherein

K is a bond or is $A^1-(A^2-A^3)_k$ -sp, wherein

A^1 is $(CH_2)_tY(CH_2)_u$, wherein

Y is $>C=O$, $>NH$, $-O-$, $-S-$ or a bond,

t is an integer from 0 to 6 and

u is an integer from 0 to 6,

A^2 is $-NHCO-$, $-CONH-$, $-OCONH-$ or $SCONH-$, or is $-CO-$,

A^3 is $(CH_2)_r$, $O(CH_2)_r$, $NH(CH_2)_r$, $S(CH_2)_r$ or $-(CHQ)-$, wherein

r is an integer from 1 to 6 and

Q is a substituted or unsubstituted alkyl or aryl group,

sp is a divalent spacer or a bond, and

k is an integer from 5 to 100, and

R is hydrogen; a ligand suitable for specific bonding to a receptor;
 a marker molecule; or a catalytically active group; and

m is at least 2,

with the proviso that

- (1) in the compound at least one R is not hydrogen,
 - (2) there are at least two K that are not a bond, and
 - (3) X, B and m are so selected that an intermolecular association of the K in liquid phase by the formation of hydrogen bonds is possible, with formation of aggregates that present on the surface a plurality of R that are not hydrogen, and
 - (4) the molar mass of the fragment $X(K)_m$ is less than 20,000, and
- n is from 2 to 100,000,
 and wherein $X(B)_m$ are non-covalently bonded.

28. (New) A method of preparing a therapeutic drug comprising:
 preparing the compound of the general formula (I)



wherein

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X is an m-valent unit and

B are identical or different and denote K-R,
 wherein

K is a bond or is $A^1-(A^2-A^3)_k\text{-sp}$, wherein

A^1 is $(\text{CH}_2)_t\text{Y}(\text{CH}_2)_u$, wherein

Y is $>\text{C}=\text{O}$, $>\text{NH}$, $-\text{O}-$, $-\text{S}-$ or a bond,

t is an integer from 0 to 6 and

u is an integer from 0 to 6,

A^2 is $-\text{NHCO}-$, $-\text{CONH}-$, $-\text{OCONH}-$ or $\text{SCONH}-$, or is $-\text{CO}-$,

A^3 is $(\text{CH}_2)_r$, $\text{O}(\text{CH}_2)_r$, $\text{NH}(\text{CH}_2)_r$, $\text{S}(\text{CH}_2)_r$ or $-(\text{CHQ})-$, wherein

r is an integer from 1 to 6 and

Q is a substituted or unsubstituted alkyl or aryl group,

sp is a divalent spacer or a bond, and

k is an integer from 5 to 100, and

R is hydrogen; a ligand suitable for specific bonding to a receptor;
 a marker molecule; or a catalytically active group; and

m is at least 2,

with the proviso that

- (1) in the compound at least one R is not hydrogen,
- (2) there are at least two K that are not a bond, and
- (3) X, B and m are so selected that an intermolecular association of the K in liquid phase by the formation of hydrogen bonds is possible, with formation of aggregates that present on the surface a plurality of R that are not hydrogen, and
- (4) the molar mass of the fragment $\text{X}(\text{K})_m$ is less than 20,000; or
 preparing the compound of the general formula (II):



wherein

$\text{X}(\text{B})_m$ may be identical or different and denote a compound of the general
 formula (I), and

n is from 2 to 100,000,

and wherein $\text{X}(\text{B})_m$ are non-covalently bonded; and

a pharmaceutically acceptable carrier.

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29. (New) A method of preparing a diagnostic test comprising:

providing a test reagent

preparing a compound of the general formula (I)



wherein

X is an m-valent unit and

B are identical or different and denote K-R,

wherein

K is a bond or is $A^1-(A^2-A^3)_k$ -sp, wherein

A^1 is $(CH_2)_tY(CH_2)_u$, wherein

Y is $>C=O$, $>NH$, $-O-$, $-S-$ or a bond,

t is an integer from 0 to 6 and

u is an integer from 0 to 6,

A^2 is $-NHCO-$, $-CONH-$, $-OCONH-$ or $SCONH-$, or is $-CO-$,

A^3 is $(CH_2)_r$, $O(CH_2)_r$, $NH(CH_2)_r$, $S(CH_2)_r$ or $-(CHQ)-$, wherein

r is an integer from 1 to 6 and

Q is a substituted or unsubstituted alkyl or aryl group,

sp is a divalent spacer or a bond, and

k is an integer from 5 to 100, and

R is hydrogen; a ligand suitable for specific bonding to a receptor;

a marker molecule; or a catalytically active group; and

m is at least 2,

with the proviso that

- (1) in the compound at least one R is not hydrogen,
- (2) there are at least two K that are not a bond, and
- (3) X, B and m are so selected that an intermolecular association of the K in liquid phase by the formation of hydrogen bonds is possible, with formation of aggregates that present on the surface a plurality of R that are not hydrogen, and
- (4) the molar mass of the fragment $X(K)_m$ is less than 20,000; or

preparing an aggregate of the general formula (II)

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wherein

$X(B)_m$ may be identical or different and denote a compound of the general formula (I), and

n is from 2 to 100,000,

and wherein $X(B)_m$ are non-covalently bonded;

and comparing the test reagent to the compounds of the general formula (I) or (II).

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